

CROSSROADS

THE OFFICIAL NEWSLETTER OF THE PREMED SCENE



Dear medical newsletter readers,

Happy August! Today, we bring to you the most recent news in medical research! This month is Appendix Cancer Awareness Month. Siri Nikku is this month's Rising Stars in Medicine writer, talking about Dr. Bethany Sabol and her work in maternal and fetal medicine. Next, Ashby Glover focuses on Alzheimer's and Parkinson's research. Then, Mahima Bhat talks about the benefits of dragon fruit. Finally, Siri Nikku ends by sharing more information about Monkeypox.

Please enjoy reading The Premed Scene's August 2024 Medical Newsletter!

Inside:

- PAGE 2 - Appendix Cancer Awareness Month
- PAGE 3 - Rising Stars in Medicine: Dr. Bethany Sabol
- PAGE 4 - Cleaning Up the Brain: Promising Research for Alzheimer's and Parkinson's
- PAGE 5 - Health Benefits of Dragon fruit
- PAGE 6 - A Growing Public Health Concern: Monkeypox

Alana Saidov

Appendix Cancer Awareness Month

BY ILANA SAIDOV



August is **Appendix Cancer Awareness** Month

Although appendix cancer accounts for only one percent of tumors in the gastrointestinal tract, creating an effective treatment for individuals with this form of cancer is imperative. Currently, appendix cancer is treated with the same methods as colon cancer. Researchers at the University of California San Diego School of Medicine discovered that using similar techniques to treat both types of cancer is not the most effective approach since the genetic mutations found in appendix cancer differ from the mutations found in colon cancer. Dr. Shen, a professor at UC San Diego, states that obtaining the molecular profiles of tumors specific to appendix cancer is imperative to make effective treatment plans for this cancer type. Furthermore, Dr. Shen believes that the "mutation profile can be used as a biomarker to separate high-risk patients, who need intensive treatment, from low-risk patients who may not need such an intensive treatment." An additional study discovered the various subtypes of appendix cancer. A notable finding in this study was a mutation in the GNAS gene. This gene, although rare in colon cancer, is found frequently in appendix cancer. This discovery led researchers to work on a treatment method for patients with GNAS-mutant tumors. The current findings on the diverse types of appendiceal tumors will help researchers develop clinical trials that will test various therapies specific to appendix cancer.

Source:

University of California – San Diego. "Genetic mutations of appendix cancer identified, may impact treatment." ScienceDaily. ScienceDaily, 8 August 2018.

<www.sciencedaily.com/releases/2018/08/180808193659.htm>.

Rising Stars in Medicine:

Dr. Bethany Sabol

BY SIRI NIKKU

Dr. Sabol was exposed to women's health early since her mom was a labor and delivery nurse. It was not a surprise when she decided to specialize in maternal and fetal medicine. This specialty included treating patients with complicated pregnancies, fetal issues, and postpartum depression. Dr. Sabol is devoted to advising women during complex pregnancies and caring for them afterward, as she views it as a precious time in their lives to be in good health. She specifically states, "It's a really nice time to partner with patients to focus on the health of their baby and look at how pregnancy impacts their health and wellbeing during and after pregnancy. It's a special opportunity."



Her particular interest in cardiovascular health intertwines with her interest in maternal health since about 20 to 30% of her patient population faces pregnancy-related hypertension. Her remote blood pressure monitoring program successfully decreased patients' readmissions for hypertension, reduced blood pressure, and managed blood pressure control six months and three years after participation for pregnant patients. This program is called the Home Observation of Postpartum Elevated Blood Pressure (HOPE-BP) program. Dr. Sabol hopes to spread it across the M Health Fairview system, where she started working in 2020. Along with her specific goals, Dr. Sabol has more extensive plans to change what postpartum care looks like so physicians like her can address concerns after pregnancy, such as diabetes and cardiovascular disease.

Dr. Sabol completed her MD at the University of Illinois at Chicago, focusing on urban medicine and health disparities. Next, she finished her residency at Oregon Health and Science University in Obstetrics and Gynecology. Finally, she completed her fellowship in Maternal Fetal Medicine at Washington University in St. Louis.

She received the Clinical Excellence Award from the University of Minnesota Physicians in 2021, the Grant Recipient Award for studying and improving disparities in care for pregnancy-related hypertensive disease in the postpartum period in 2019, and the Resident Research Award for Excellence in Research, the resident research day in 2016.

Sources:

<https://med.umn.edu/bio/bethany-sabol>

<https://mspmag.com/health-and-fitness/2024-top-doctors-rising-stars-edition/>

Cleaning Up the Brain: Promising Research for Alzheimer's and Parkinson's

BY ASHBY GLOVER

Since 2012, the deterioration of the glymphatic system (the brain's waste removal process) with age has been regarded as the likely culprit of Alzheimer's and Parkinson's. (1) Each is characterized by the accumulation of proteins in the brain. Several research papers have recently provided insight into how this waste-removal process works. A promising treatment that restores the waste removal process in mice has given new hope that effective human treatment may soon be a reality.

The latest understanding of how the glymphatic system works is that slow electrical waves move fluid from deep in the brain to its surface. This fluid, which carries the waste produced by the brain, then interacts with the dura mater (the thick membrane around the brain and spinal cord). "A sophisticated interface allows the waste products in that fluid to be absorbed into the bloodstream," where they can then be removed from the body. (2)

For patients with Alzheimer's, growing evidence indicates that the brain's waste removal system is impaired, allowing the build-up of a substance called amyloid that forms sticky plaques in the brain. Research shows that a similar build-up of different proteins may cause Parkinson's. The new study on the brain's waste removal process allows doctors and researchers to better understand the mechanisms that drive a well-functioning glymphatic system, thereby illuminating potential treatments to fix a malfunctioning one.



With a more thorough understanding of the brain's glymphatic system, researchers have restored a vital part of the system in old mice. This increased the flow of fluid in the brain, restoring the efficiency of waste removal to that found in younger rats. Dr. Douglas Kelley, one of the study's lead authors, was optimistic regarding these results. "We now know how to accelerate function. One can see how this approach, combined with other interventions, could be the basis for future therapies for these diseases."(3)

1. Jeffery Iliff, et al. "A paravascular pathway facilitates..." *Sci Transl Med* 4, no. 147 (2012). doi: [10.1126/scitranslmed.3003748](https://doi.org/10.1126/scitranslmed.3003748)

2. Jon Hamilton. "The brain makes a lot of waste..." NPR, 26 June 2024. <https://www.npr.org/sections/shots-health-news/2024/06/26/g-s1-6177/brain-waste-removal-system-amyloid-alzheimer-toxins>

3. Mark Michaud. "Cleaning up the aging brain." University of Rochester, 15 August 2024. <https://www.rochester.edu/newscenter/cleaning-up-the-aging-brain-616872/>

Health Benefits of Dragon fruit

BY MAHIMA BHAT

With its vibrant appearance and unique taste, dragon fruit isn't just a treat for the eyes and palate—it's a powerhouse of nutrition. Packed with antioxidants, vitamins, and fiber, this tropical fruit offers a range of health benefits, from boosting the immune system to promoting healthy digestion. Dragon fruit is juicy with a slightly sweet taste that some describe as a cross between a kiwi, a pear, and a watermelon. The seeds have a nutty flavor.

Dragon fruit has many potential health benefits, though studies are mostly early. The fruit may:

Help prevent oxidative damage. Antioxidants like betacyanin, phenolic acid, and flavonoids are abundant in it. These organic compounds shield your cells from the damaging effects of free radicals, which are chemicals that can cause illnesses, including cancer and early aging.

Help with weight management. Like other fruits, it has a high water content and is naturally low in calories and high in fiber. High-fiber foods can help you feel fuller between meals, which makes them excellent snacks.

Ease constipation. Dragon fruit is an excellent source of fiber that might help you defecate and soften stools. Similar to certain other fruits, it has mild laxative properties.

Improve gut health and lower inflammation. The ratio of beneficial to harmful bacteria in your intestines can be improved by increasing the amount of prebiotics in your body. More specifically, probiotics lactobacilli and bifidobacteria are grown more readily when dragon fruit is consumed. These and other beneficial bacteria in your stomach can aid in the defense against bacteria and viruses that cause illness. They help in food digestion as well.

Sources:

<https://www.webmd.com/food-recipes/benefits-dragon-fruit>

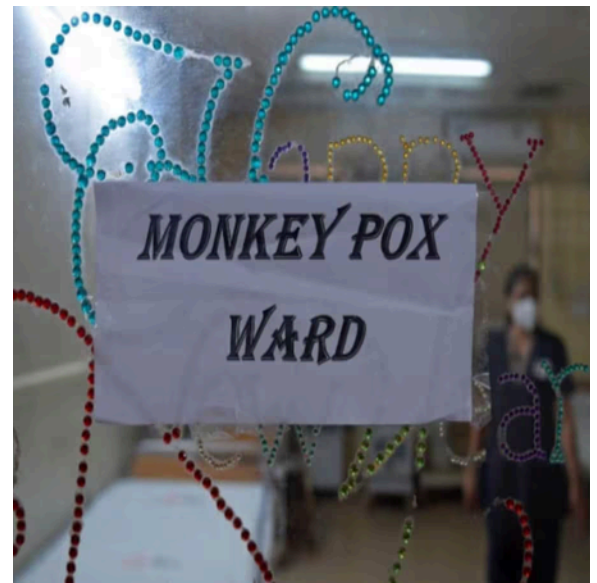
<https://www.healthline.com/nutrition/dragon-fruit-benefits>



A Growing Public Health Concern: Monkeypox

BY SIRI NIKKU

Monkeypox has been on the rise recently in the Democratic Republic of the Congo (DRC) and multiple countries in Africa, leading to the World Health Organization Director Dr. Tedros Adhanom Ghebreyesus declaring the situation as a public health emergency of international concern (PHEIC) under the International Health Regulations (IHR). While monkeypox has been in the DRC for the past decade, the number of reported cases has increased significantly each year. For instance, the number of cases for 2024 went over last year's total, with more than 15,600 cases and 537 deaths. The situation grows worse with the quick spread of the virus in the DRC, which is known as clade 1b and is mainly spreading through sexual relationships. This new strain discovery has been the main reason behind the declaration of the PHEIC. In the past month, about 100 laboratory-confirmed cases of clade 1b have been found in countries near the DRC, such as Burundi, Kenya, Rwanda, and Uganda. However, even with all these cases, experts believe that more are not being detected, leading to more concern about how quickly this virus is truly spreading. There have been multiple outbreaks of different clades of pox with varying ways of transmission and various levels of risk. There is still hope, with two vaccines for monkeypox already present and an initiative pushing monkeypox vaccines to lower-income countries to slow the spread. The WHO is also collaborating with other countries to determine potential vaccine donations and accelerate the broad reach of monkeypox vaccines. The WHO anticipates \$15 million from the US to aid in responsiveness, surveillance, and preparedness of this growing concern, with more funds from others to continue.



With all the panic about monkeypox, there may still be confusion about what it is and how it can be spread. Monkeypox is caused by the monkeypox virus, an Orthopoxvirus species. There are two major clades or types: clade I and clade II. One of the major symptoms of this virus is the skin rash or mucosal lesions lasting 2-4 weeks. Symptoms like fever, headache, muscle aches, back pain, low energy, and swollen lymph nodes often accompany this. Monkeypox can be transmitted to other humans through physical contact, contaminated objects, and infected animals. Monkeypox is usually treated with supportive care, reducing symptoms and preventing further spread. To help symptoms and protect others, wash hands often with soap and water, wear a mask and cover lesions for those recovering, avoid touching objects in shared spaces, take over-the-counter pain medications for pain, draw sitz baths or warm baths with baking sodas for body sores. Practicing good hygiene habits will help you and others around you.

Sources:

<https://www.who.int/news-room/fact-sheets/detail/monkeypox>

<https://www.who.int/news/item/14-08-2024-who-director-general-declares-mpox-outbreak-a-public-health-emergency-of-international-concern>